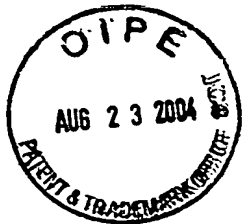


Snapshot taken at t = 9+ of Example 5. cancelling-predicate
-new I matches target address in stack

FIG. 2



load time address code	predicate-assignment (at load time)				predicate-use (at code execution time)			
	stack							
	B	v	p	TA	$p_{in}=p_r$	cp_{in}	p_{out}	cp_{out}
1 100 I_1 $z = x \text{ op } y$				empty	1	0	$p_1=1$	-
2 200 B_2 if (bc_2) goto 400	B_2	1	P_2	400	1	0	$p_2=\overline{bc_2}$	bc_2
3 300 I_3	B_2	1	P_2	400	P_2	0	-	-
4 400 I_4				empty	P_2	cp_2	$\overline{bc_2}+bc_2$	-
5 500 I_5				empty	P_4	0	-	-
6 600 B_6 if (bc_6) goto 800	B_6	1	P_6	800	P_4	0	$\overline{bc_6} \cdot p_4$	$bc_6 \cdot p_4$
7 700 I_7	B_6	1	P_6	800	P_6	0	-	-
8 800 I_8				empty	P_6	cp_6	$\overline{bc_6}+bc_6$	-
9 900 I_9				empty	P_8	0	-	-

Equations - for "T": $p_1=p_{out}=p_{in}+cp_{in}$; for "B": $p_{out}=\overline{bc} \cdot p_{in}$; $cp_{out}=bc \cdot p_{in}$

FIG. 3



			predicate-assignment (at load time)				predicate-use (at code execution time)				
			stack								
load time	address	code	B	v	p	TA	$p_{in}=p_r$	cp_{in}	p_{out}	cp_{out}	p_l - condition for l execution
1	100	l_1				empty	1	0	$p_1=1$	-	1
2	200	B_2					1	0	$p_2=\overline{bc_2}$	bc_2	1
3	300	l_3					P_2	0	-	-	$\overline{bc_2}$
4	400	B_4					P_2	0	$\overline{bc_4+p_2}$	$bc_4 \cdot p_2$	1
5	500	l_5					P_4	0	-	-	$\overline{bc_2 \cdot bc_4}$
6	600	l_6					P_4	cp_4	$p_6 \cdot cp_4$	-	$\overline{bc_4 \cdot bc_2 + bc_4 \cdot bc_2} = \overline{bc_2}$
7	700	l_7					P_6	0	-	-	$\overline{bc_2}$
8	800	l_8					P_6	cp_2	p_6+cp_2	-	$\overline{bc_2}+bc_2=1$
9	900	l_9					P_8	0	-	-	1

Equations - for "T": $p_1=p_{out}=p_{in}+cp_{in}$; for "B": $p_{out}=\overline{bc} \cdot p_{in}$; $cp_{out}=bc \cdot p_{in}$

FIG. 4



		predicate-assignment (at load time)		predicate-use (at code execution time)		
		stack		$p_{in}=p_r$	cp_{in}	p_{out}
load time	address	code	B	v_i	p_i	TA
1	100	l_1		empty	1	0
		$z = x \text{ op } y$			$p_1=1$	-
2	200	B_2		$1 \mid P_2 \mid 600$	1	0
		if (bc_2) goto 600			$p_2=\overline{bc_2}$	bc_2
3	300	l_3		$1 \mid P_2 \mid 600$	P_2	0
					-	$\overline{bc_2}$
4	400	B_4		$1 \mid P_4 \mid 800$ $1 \mid P_2 \mid 600$	P_2	0
		if (bc_4) goto 800			$\overline{bc_4}+p_2$	$bc_4 \cdot p_2$
5	500	l_5		$1 \mid P_4 \mid 800$ $1 \mid P_2 \mid 600$	P_4	0
					-	$\overline{bc_4} \cdot \overline{bc_2}$
6	600	l_6		$1 \mid P_4 \mid 800$ $0 \mid P_2 \mid 600$	P_4	cp_2
					$p_4 \cdot cp_2$	-
					$(\overline{bc_4} \cdot \overline{bc_2}) + bc_2 = \overline{bc_4} + bc_2$	
7	700	l_7		$1 \mid P_4 \mid 800$ $0 \mid P_2 \mid 600$	P_6	0
					-	$\overline{bc_4} + bc_2$
8	800	l_8		empty	P_6	cp_4
					$p_6 + cp_4$	-
					$\overline{bc_4} + bc_2 + (bc_4 \cdot \overline{bc_2}) = 1$	
9	900	l_9		empty	P_8	0
					-	1

Equations - for "T": $p_1 = p_{out} = p_{in} + cp_{in}$; for "B": $p_{out} = bc \cdot p_{in}$; $cp_{out} = bc \cdot p_{in}$

FIG. 5



			predicate-assignment (at load time)				predicate-use (at code execution time)			
load time	address	code	stack			$p_{in}=p_r$	cp_{in}	p_{out}	cp_{out}	p_1 - condition for l execution
			B	v	p TA					
1	100	I_1 $z = x \text{ op } y$	empty			1	0	$p_1=1$	-	1
2	200	B_2 if (bc_4) goto 800	B_2	1	P_2 1000	1	0	$p_2=\overline{bc}_2$	bc_2	1
3	300	I_3	B_2	1	P_2 1000	P_2	0	-	-	\overline{bc}_2
4	400	B_4 if (bc_4) goto 800	B_4	1	P_4 800	P_2	0	\overline{bc}_4+p_2	$bc_4 \cdot p_2$	1
			B_2	1	P_2 1000					
5	500	I_5	B_4	1	P_4 800	P_4	0	-	-	$\overline{bc}_4 \cdot \overline{bc}_2$
			B_2	1	P_2 1000					
6	600	B_6 if (bc_6) goto 1200	B_6	1	P_6 1200	P_4	0	$\overline{bc}_6 \cdot p_4$	$bc_6 \cdot p_4$	1
			B_4	1	P_4 800					
			B_2	1	P_2 1000					
7	700	I_7	B_6	1	P_6 1200	P_6	0	-	-	$\overline{bc}_6 \cdot \overline{bc}_4 \cdot \overline{bc}_2$
			B_4	1	P_4 800					
			B_2	1	P_2 1000					
8	800	I_8	B_6	1	P_6 1200	P_6	cp_4	p_6+cp_4	-	$(\overline{bc}_6 \cdot \overline{bc}_4 \cdot \overline{bc}_2) + (bc_4 \cdot \overline{bc}_2)$ $= (\overline{bc}_6 + bc_4) \overline{bc}_2$
			B_4	0	P_4 800					
			B_2	1	P_2 1000					
9	900	I_9	B_6	1	P_6 1200	P_8	0	-	-	$(\overline{bc}_6 + bc_4) \overline{bc}_2$
			B_4	0	P_4 800					
			B_2	1	P_2 1000					
10	1000	I_{10}	B_6	1	P_6 1200	P_8	cp_2	p_8+cp_2	-	$((\overline{bc}_6 + bc_4) \overline{bc}_2) + bc_2$ $= \overline{bc}_6 + bc_4 + bc_2$
11	1100	I_{11}	B_6	1	P_6 1200	P_{10}	0	-	-	$(\overline{bc}_6 + bc_4) bc_2$
12	1200	I_{12}	empty			P_{10}	cp_6	$p_{10}+cp_6$	-	$bc_6 + bc_4 + bc_2 +$ $(bc_6 \cdot bc_4 \cdot bc_2) = 1$
13	1300	I_{13}	empty			P_{12}	0	-	-	1

Equations - for "T": p₁=p_{out}=p_{in}+cp_{in}; for "B": p_{out}=bc·p_{in}; cp_{out}=bc·p_{in}

FIG. 6